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ABSTRACT

Using a conformity research methodology, the authors investigated the questions of whether (a) the Asch-type conformity setting produces greater yielding than variant settings where subjects are screened from one another and (b) the nonverbal element of contradictory or inconsistent nonverbal communications significantly alters response to the verbal message. Responses of thirty subjects, all video taped to augment the analyses, were studied with dependent measures, including frequency of conformity, a social desirability inventory, and a number of self-reaction instruments. Results indicated that the amount of yielding did not vary with type of conformity setting and that the amount of yielding was not affected by nonverbal manipulations designed to alter conformity behavior. Suggestions for further study are included. (Author/CH)

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# AN EXPLORATORY ANALYSIS OF THE EFFECTS OF COMPLEMENTARY AND CONTRADICTORY NONVERBAL CUES ON CONFORMITY BEHAVIOR

by

Harry Dennis, Judy Vogel, Becky Drury

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# AN EXPLORATORY ANALYSIS OF THE EFFECTS OF COMPLIMENTARY AND CONTRADICTORY NONVERBAL CUES ON CONFORMITY BEHAVIOR*

Harry Dennis, Judy Vogel, Becky Drury

Commencing with the classic research accomplished by Solomon Asch (1951, 1952, 1956), conformity--or yielding to group pressure--has been a phenomenon of continued interest to investigators in the behavioral sciences. Reviews by Krech, Crutchfield, and Ballachey (1962), and Proshansky and Seidenberg (1965), have reported research findings germane to the amount and kind of conformity produced in a variety of experimental settings and conditions. Summarily, situational factors, psychological processes, individual differences, and personality correlates constitute the principle rubrics within which conformity research has thrived.

For example, studies have demonstrated that conformity variance is affected by such situational factors as group size, group composition, unanimity of group consensus, strength of coercion to conform, and the larger social context (the prevailing social orthodoxy); by such psychological processes as the manner in which resolution of the dissonance produced in a conformity condition is achieved, and the other motivational and emotional forces acting on the individual that affect one's responsiveness to group pressure; by such individual differences as sex (typically females have yielded more than males), conformity proneness (including anticonformity),

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and cultural expectations; finally, by such personality and behavioral correlates as need for approval, ego strength, anxiety, self-cpncept, suggestibility, and personal attitudes and values.

Variants of two techniques have been utilized to elicit conformity behavior. The first technique, developed by Asch (1952), involves programming confederates to make unanimous, bogus responses to a stimulus in the presence of a naive subject. Typically, the stimulus condition consists of a perceptual task varying in stimulus ambiguity (such as a line or geometric figure discrimination exercise). The second technique, reported by Crutchfield (1955), avoids the uneconomical use of confederates by relying on "electronic stooges" to simulate, ostensibly, the decisions reached by a unanimous majority. This technique has been adopted by most investigators in recent years because of the opportunity to maximize the number of subjects simultaneously exposed to a treatment condition.

The configurative disparity between the two experimental techniques for inducing conformity was crucially important to the rationale that was behind the present investigation. Namely, the Asch technique requires that the subject participate in an interpersonal behavior event characterized by the potential for face-to-face verbal and nonverbal communication between group members during the conformity exercise. On the other hand, the use of "electronic stooges," common to the Crutchfield approach, necessitates that subjects are partitioned from one another. Hence, there is little opportunity for verbal or nonverbal interaction between subjects during the experiment.

Because of the greater potential for both verbal and nonverbal

exchange in the Asch conformity setting to function as an additional source of influence, the Crutchfield variation should produce, predictably, less group pressure on the subject to conform and, consequently, less yielding behavior. Deutsch and Gerard (1955) and Levy (1960) provided substantive support for this expectation. Neither of these investigators, however, attempted to isolate and assess the separate effects of either the verbal or nonverbal component as potential sources of variance accounting for yielding tendencies. Thus, one purpose of this study was to determine if confederate nonverbal behavior can influence yielding to group pressure.

The impetus for assessing the impact of nonverbal behavior on the conformity process was triggered by some recent findings summarized by Mehrabian (1971a), dealing with inconsistent communications. As Mehrabian puts it, ". . . we may express something verbally while our facial expressions, posture, tone of voice, or gestures say the opposite (p. 42)." More generally, Mehrabian (1971b), noted that ". . . when there is an inconsistency between verbally and nonverbally expressed attitudes, the nonverbal portion will dominate in determining the total message (p. 140)."

Mehrabian's research concerning the resolution of inconsistent messages has been limited primarily to studying the effects of facial and vocal cues that contradict verbal messages. Typically, the criterion is some measure of "affect." Subjects are asked to rate the valence and amount of liking or feeling communicated (by interpreting the <u>total</u> message impact) as a result of the contradiction or inconsistency. For example, verbally the word "disgust" suggests a negative affective valence; but, when cast with inconsistent or contradictory facial and vocal expressions, it acquires a positive valence (measured in terms of total liking or feeling communicated).

The present investigation operated from a conceptual framework somewhat analogous to Mehrabian's. The major difference, however, was that the conformity paradigm used in this study provided a unique research setting to test the effects of contradictory nonverbal cues in a social influence situation. Thus, a second purpose of this investigation was to attempt verification of the inconsistency hypothesis using stronger manipulations than have previously been reported in the literature. Specifically, can contradictory nonverbal cues influence overt behavior--in this case, yielding to group pressure?

Since little is known about the personality characteristics of the individual who is responsive or unresponsive to inconsistent or contradictory nonverbal cues--and because the need for approval motive (Crowne and Marlowe, 1964), has gained some acceptance as a conformity correlate--social desirability was included as another dependent variable in the study.

Recapitulating, this investigation had the following specific aims:

1. To determine if the superior influence of the Asch-type conformity setting (over the Crutchfield variation) on yielding behavior could be attributed, in part, to the nonverbal behavior exhibited by experimental confederates.

2. To determine if amount of yielding to group pressure can be manipulated by nonverbal cues that either compliment or contradict the verbal (overt) behavior of confederates responding unanimously to a conformity stimulus.

A further dimension was added to the study by videotaping subjects as they responded to the experimental stimulus. Through an analysis of the videotapes, an attempt was made to (a) estimate reliably the degree of confidence or doubtfulness exhibited by the subjects nonverbally as they announced their decisions, and (b) determine if these estimations

by independent raters differed significantly for each treatment condition.

Finally, self-report measures were constructed to assess subject reaction to the experimental manipulations and to augment the chief findings of the investigation.

## Method

### Stimulus Validation

A validation group, composed of twenty male and female undergraduate and graduate students enrolled in a nonverbal communication seminar, viewed a total of twenty-four slides and then selected from a list of eight emotional categories[1] the one category that most closely approximated the emotion displayed on the slide. Table 1 reports the results of the stimulus validation exercise

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Insert Table 1

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The twelve slides that constituted the final stimulus materials met two arbitrary criteria, which Table 1 indicates were satisfied: (a) a high degree of agreement was desired among judges for those slides that would be used for the neutral trials[2] (trials 1, 2, 6, 7, 11, and 12); and (b) only those slides which were each assigned to at least three emotional categories by the judges were utilized for the critical trials[3] (trials 3, 4, 5, 8, 9, and 10). This latter procedure insured a reasonable degree of stimulus ambiguity for those slides that would be used during the critical trials.

The decision to use slides of faces depicting emotions was made after a consideration of the difficulties involved in disguising the real

purpose of the experiment.[4] Subjects were led to believe that they were participating in a commercial advertising study designed to determine whether facial emotions depicted on the faces of models in magazine advertisements actually convey the message intended by the sponsor.

Confederate Validation

Three confederates[5] were trained to exhibit nonverbal behaviors compatible with three experimental conditions: confident, doubtful, and neutral.

For the confident condition, the confederates were trained to express consistently the following nonverbal cues while individually responding to the experimental stimulus: (a) head movement - up and down, (b) palm position - facing downward, (c) lip configuration - slight stretching to suggest certainty, (d) body angle - forward movement of the trunk, and (e) vocal - emphatic, slightly falling tone to suggest the imperative.[6]

For the doubtful condition, the confederates were trained to express the obverse of the cues exhibited during the confident condition: (a) head movement - side-to-side, (b) palm position - facing upward, (c) lip configuration - slight puckering to suggest uncertainty, (d) body angle - backward movement of the trunk, and (e) vocal - hesitating, slightly rising tone to suggest the interrogative.

Finally, for the neutral trials within each treatment,[7] the confederates were trained to respond to the experimental stimulus by remaining motionless with a "deadpan" facial expression; furthermore, vocal intonations were held to an absolute minimum.

The same group of judges who validated the stimulus materials

observed each confederate respond to the three nonverbal conditions, without knowing in advance which condition the confederate was attempting to simulate. Half of the validation group (n=11)[8] made component assessments of the confederates' nonverbal behaviors; that is, they indicated--according to discrete response categories--either the direction of movement (for example, "head movement"--up and down, side-to-side, no movement, or did not notice), or whether a particular cue, such as vocal behavior, suggested doubt or confidence or neither. Each nonverbal cue, which the confederates had been trained to express, was evaluated in this manner.

Table 2 presents a summary of the component assessment of the confederates' nonverbal behavior.

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Insert Table 2

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Each of the cell percentages are averaged across the three confederates and indicate the extent to which the judges were able to perceive congruence between the specific nonverbal cues which the confederates were attempting to express and the particular experimental condition that was simulated. An examination of the cell percentages indicates that except for side-to-side head movement (the doubtful condition), in which there was only 18 per cent agreement, a substantial majority of the judges perceived congruence between the intentionally encoded cue and the nonverbal condition the cue was designed to signify. The row averages add further credence to this observation.

The other half of the validation group (n=10) made judgmental assessments of the confederates' nonverbal behaviors--judgmental in the

sense that they were asked to make "Gestalt" evaluations and indicate the degree to which confidence or the absence of doubt was being expressed by the confederates during a given simulation episode. Responses were recorded on both a forced-choice and seven-point, Likert scale. In general, the confederates were perceived by the validation group to exhibit nonverbal behaviors consistent with the experimental condition that was simulated. Table 3 offers support for this observation.

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Insert Table 3

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Table 3 also indicates that in response to a question evaluating the degree to which the nonverbal behavior of the confederates seemed artificial or exaggerated, a majority of the judges felt that the confederates were excessively dramatic during the doubtful condition (53 per cent). This feedback provided the basis for tempering nonverbal responses in this condition through additional practice and training.

The component and judgmental evaluations were correlated as a final step in the confederate validation procedure.[9] High correlations were interpreted to mean that the additive effects of specific encoded nonverbal cues are relatively analogous to decoded "Gestalt" impressions of nonverbal communication behavior. These correlations are reported in Table 4.

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Insert Table 4

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Subjects

Thirty subjects volunteered to participate in the experiment. Although a random sample from a homogeneous population was not obtained,[10]

subjects were assigned at random to the three conditions.

Description of Treatments

Confident treatment (n=10). During eight of the twelve trials (six critical and two neutral), the three confederates expressed confidence nonverbally, while responding orally to the stimulus. During the remaining four trials, the confederates expressed neither confidence nor doubt and, instead of oral responses to the stimulus, 5 X 7 cards were displayed to indicate preferences.[11]

Doubtful treatment (n=10). During eight of the twelve trials, the confederates exhibited uncertainty or doubtfulness nonverbally as they responded orally to the stimulus. For the remaining four trials, 5 X 7 cards were again used to signify preferences.

Absence treatment (n=10). During this treatment, the three confederates and the subject were screened from each other for the entire twelve trial sequence. No oral communication was permitted, and responses were made by displaying cards to indicate decisions about the depicted emotion. The experimenter recorded all responses on a blackboard visible to the subject and faked the judgments made by the confederates during the six critical trials to present a unanimously wrong "group" decision before the subject reported his preference. The absence treatment was intended to replicate the basic structural characteristics of the Crutchfield variation discussed earlier, without employing electronic mechanics to achieve a group pressure effect.

Treatment Administration

Subject reporting was staggered in fifteen-minute intervals to facilitate the unobtrusive introduction of the confederates. A brief

introduction was accomplished, and then the subject and confederates were escorted into one of two soundproof rooms equipped with one-way mirrors.[12] In the confident and doubtful treatments, subjects and confederates sat at a "U" shaped table where they were clearly visible to each other. Instructions were read silently,[13] and the experimenter highlighted the procedure for identifying the emotions depicted on the slides.[14]

Each slide was shown for three seconds, and the pre-response time was held constant at ten seconds before the confederate initiated a response.[15] Immediately following the last trial in each treatment, the subject and confederates were escorted to soundproof booths where the subject completed a post-experimental packet.

Finally, the subject was thoroughly debriefed regarding the true nature of the experiment by one of the investigators and was then given the opportunity to observe subsequent subjects participating in the experiment from the laboratory observation deck.

Instruments

Conformity. The experimenter recorded all responses made by the subjects. A conformity index was derived for each subject by summing over instances of yielding for the six critical trials. Thus, a subject's conformity score could range from 0 to 6.

Treatment manipulation check. Subjects were asked to indicate on a seven-point Likert scale how confident they felt the other subjects (confederates) were about their judgments during the experimental exercise. This scale was administered to insure that subjects perceived each nonverbal condition as intended.

Social desirability. The Marlowe-Crowne Social-Desirability Scale is a thirty-three item true-false instrument. A subject's score can range from 0 to 33, with higher scores indicating stronger need for approval. For reliability, Crowne and Marlowe (1964), reported a test-retest correlation of .88. The investigators also claimed construct validity for the instrument.

Self-reaction inventory. Several scaled items were included to determine the extent to which the subject felt confident about his own judgments; how much confidence he placed in the judgments of others; his feelings towards the other group members, including whether he felt accepted or rejected by the group; how personally threatening he found the experiment; and, finally, whether he thought that the other group members had more information about the experimental exercise than he had been given.

Open-ended inventory. Several open-ended questions were constructed to detect experimenter bias, effect, and the presence of demand characteristics. These questions were answered after the subject completed the other instruments.

## Results

Because the sample was not drawn from a homogeneous population, a nonparametric model was selected for the analysis of data. The statistical tests applied in the analyses were taken from Siegel (1956), and the level of significance was established at $p < .05$.

### Analysis of Conformity Behavior

Figure 1 presents a graphic description of the amount of yielding observed in each treatment condition across all trials.

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Insert Figure 1

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Figure 1 verifies that the slides used for the neutral trials (1, 2, 6, 7, 11, and 12) were perceived similarly by the subjects as they were by the stimulus validation group. These trials served mainly to reassure the subjects that the confederates were capable of making uniformly accurate assessments of the stimuli.

Figure 1 also indicates that for trials three, four, and five, the pattern of conformity behavior across treatments was more clustered than for trials eight, nine, and ten. In other words, the greatest differences between treatments occurred during trials eight, nine, and ten. The most important trend evident from Figure 1, however, is that none of the treatments consistently produced more yielding behavior across all trials and, in particular, the critical trials. For example, although the confident treatment was associated with more yielding behavior than the doubtful condition for trials three, five, eight, and nine, the converse was true for trials four and ten.

Table 5 indicates that 37 per cent of the total judgments made by the subjects were in error, with the most yielding occurring in trial eight and the least yielding occurring in trial four. These yielding results are similar to those reported by Asch (1951,1952,1956), with the exception that his discrimination tasks usually involved the use of less ambiguous perceptual stimuli.

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Insert Table 5

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Table 5 also provides some mild support for a common conformity finding regarding stimulus ambiguity. In Table 5 the amount of yielding by trial is underscored by percentages showing varying proportions of the stimulus validation group who believed that the slide depicted one emotional category or another. There was some tendency for more yielding to occur for those trials where the respective slide had been assigned previously to four--as opposed to three--emotional categories by the stimulus validation group. However, the Mann-Whitney U test applied to the differences in yielding associated with the slides assigned to three versus four emotional categories only approached significance ($U = 1$; $p < .10$).

Manipulation Check

Subjects estimated how confident the confederates behaved during the exercise. The Kruskal-Wallis ANOV applied to the three treatments produced a significant H equal to 14.69 ($p < .001$; $X^2 = 13.82$; df=2). A Mann-Whitney U test indicated that: (a) subjects exposed to the confident treatment perceived the confederates to be significantly more confident and less doubtful than subjects exposed to the doubtful condition ($p < .001$, one-tailed; $U = 3$, critical value = 10); (b) subjects perceived the confederates in the doubtful condition to be significantly less confident than the confederates were perceived in the absence condition ($p < .05$, one-tailed; $U = 18$, critical value = 27); and (c) there were no significant differences in perceptions of confidence expressed by the confederates in a comparison of the confident and absent treatment conditions. Hence the treatment check confirmed that the nonverbal manipulations were successful.

Treatment Effectiveness

To determine if either the confident, doubtful, or absence treatment conditions produced significantly greater conformity during the six critical trials, a Kruskal-Wallis ANOV was applied to the yielding observations. The obtained $H$ value was not significant (3.40; $df=2$). An inspection of the data indicated that there were 25 instances of yielding during the critical trials for both the confident and absence treatments, and 18 yielding occurrences in the doubtful condition. Recognizing the pitfalls associated with discussions derived from insignificant data bases, the tests of the treatment effects warrant two observations.

First, contrary to our expectations, the Asch-type conformity setting was not associated with more conformity than the variation of the Crutchfield setting that we used. Second, the fact that there was more yielding in the confident condition than in the doubtful condition ($p < .12$) suggests that the manipulations did produce effects in the anticipated direction.

Social Desirability Assessment

One explanation for the failure to find significant differences between treatments could be attributed to social desirability. For example, Strickland and Crowne (1962), have shown that approval motivated subjects have difficulty resisting group pressure. Several tests were applied to explore the social desirability phenomenon in the present investigation.

First, the Kruskal-Wallis ANOV revealed no significant differences between treatments in terms of social desirability responses ($H = 2.63$;

df=2). This finding was not surprising since subjects were assigned randomly to treatments. Second, when amount of yielding for the entire sample was correlated with social desirability scores, a moderately strong positive relationship was obtained ($r_s$ = .49; $p < .01$, df=28). Third, when the sample was divided into high and low social desirability groups,[16] significantly greater yielding was associated with the former group ($p < .04$, one-tailed; $Z = 1.74$). Taken together, these results suggest that the yielding variance observed in this study can be explained in terms of the need for approval construct.

Videotape Analysis

Three independent raters viewed videotaped segments of the subjects prior to, during, and immediately after each of the twelve trials in both the confident and doubtful treatment conditions. Judgmental evaluations were made of the amount of confidence or doubtfulness exhibited nonverbally by the subjects during each response period, using a nine-point Likert scale for each trial The raters did not know in advance which treatment the subject was actually receiving.

A Kendall Coefficient of Concordance was first computed to determine inter-rater reliability. A significant positive coefficient (W = .77) was obtained ($p < .01$). A Mann-Whitney U test was then applied to determine if rater perceptions of confidence exhibited by the subjects differed between treatment groups. To accomplish this analysis, the basis for the ordered ranks was the mean of the three ratings assigned to each subject in each condition. A one-tailed test was applied, since it was predicted that subjects in the confident condition would be rated significantly less nonverbally doubtful than subjects in the doubtful condition.

The resulting U was significant ($p<.025$). Interestingly, a separate analysis of subject self-report ratings of the amount of confidence they personally experienced in the decisions that were made did not differ significantly between treatments ($H = 3.06$; $df=2$).

Analysis of Tangential Data

Acceptance by other members. Ten per cent of the subjects felt strongly accepted by the other group members; 47 per cent felt moderately accepted; 33 per cent believed they were somewhat accepted; and 10 per cent did not feel accepted by the others at all. Furthermore, when asked to describe their feelings toward the other group members, 73 per cent indicated no feelings in terms of liking; 23 per cent expressed positive feelings; and one subject indicated that he disliked the other group members. Chi Squares applied to the responses for both questions across treatments were not significant. Hence, neither feelings of acceptance nor liking were related to the particular treatment which the subject received.

Perceived threat. Subjects were also asked to indicate the degree to which they found the experimental exercise threatening. Eighty per cent did not feel at all threatened and 20 per cent experienced some threat (later clarified to mean that they felt uncomfortable disagreeing with the consistent unanimity expressed by the other group members).

Cover story effectiveness. Subjects were asked if they believed the other subjects had been provided with more information about the facial emotion discrimination procedures. Eighty-seven per cent responded negatively to this question. Of the remaining 13 per cent who responded positively, it was interesting to note that one of the individuals conformed for all six critical trials, while another yielded on four critical trials.

Both of these individuals reported that they were cognizant of erroneous group pressure to influence their preferences.[17]

Confidence in others. Subjects were asked to indicate how much confidence they placed in the judgments of others while trying to arrive at their own decisions during the exercise. Fifty-seven per cent maintained that they placed no confidence in the other group members; 30 per cent said some confidence; and 10 per cent placed a moderate amount of confidence in others. When the sample was subdivided into "no confidence" groups, no significant differences were observed in yielding tendencies. A further check for differences between treatments was also not significant.

Sources of experimental error. This analysis was conducted to determine if the experimenters, the experiment, or the confederates forced conpliance by some means other than that intended through the experimental manipulations. Twenty per cent of the subjects indicated that the experiment seemed vaguely similar to other experiments they had read about; however, only two of these subjects were able to specify that the experiment seemed similar to "conformity" experiments. No subject was able to identify a spurious source of influence due to experimenter idiosyncrasies or as a result of method peculiarities that suggested absence of uniformity within and between treatment conditions. Finally, none of the subjects' responses to questions asked in this analysis suggested cooperative compliance with the investigators' treatment expectations.

## Discussion

This investigation produced surprising and unexpected results. The Asch-type conformity setting failed to induce more yielding than the Crutchfield variation, as had been predicted. Although this outcome may

suggest that nonverbal exchanges are inconsequential in group pressure situations (expecially in those settings where the basis for the influence is informational and not normative--Deutsch and Gerard, 1955), we offer three observations that caution against this conclusion.

First, the sample was not just heterogeneous, but relatively sophisticated for this kind of an experiment. Much of the conformity research has been accomplished using younger, more homogeneous subjects (the proverbial college sophomore), whose maturity and experience level may be more subject to social influence in the conformity laboratory than was true for our sample. Furthermore, a good deal of the conformity research was conducted in the 1950's and early 1960's. But within the last ten years, the prevailing social orthodoxy has--to a noticeable extent--heralded and encouraged the "do your own thing" or "tell it like it is" philosophy of individualistic pursuit. Few people would argue that this trend has not been popularized in cultist fashion on most of our college campuses. In short, while we are unable to maintain that anticonformity is a pervasive social norm, the present generation of young adults seems to share a proclivity that characteristically dissents from efforts to achieve unequivocal acceptance of group pressure.

Second, the nonverbal cues exhibited by the confederates in both the confident and doubtful treatments may have had the net effect of depressing conformity behavior. Although questions directed to the subjects after the conformity exercise attempted to--but could not-- confirm this speculation, the fact that a uniform artificial nonverbal condition was created (by necessity for the manipulation) does not preclude this possibility.

Third, and in our estimation most important to the theoretical

value of this investigation, we made an assumption that remains to be tested; namely, inner- or self-directed nonverbal cues--that to others may appear as an appraisal of the originator's own verbal (overt) behavior--do exert appreciable influence over others. Our confederates announced a decision and then contradicted or complimented that decision nonverbally. They did not, however, nonverbally compliment or contradict (show disapproval about) the decisions made by the subjects. In other words, the nonverbal manipulations in this study did not necessarily affect the perceived social reinforcement schedules of the subjects. If, in fact, the confederates had expressed nonverbal disapproval when a subject did not conform or nonverbal approval when he did conform, the results may have been dramatically different. The literature concerned with behavior modification supports this S - R interpretation regarding the probable effects of "other-directed" nonverbal cues. (Verplanck, 1955; Krasner, 1958; Williams, 1964).

In short, we believe that the potential role of nonverbal behavior in social influence situations has not received sufficient attention. Our data will not allow us to argue in terms of a convincing "fit" for either an operant conditioning or social skill model (Argyle, 1969)--which deal with influence primarily in dyadic situations. But this study has demonstrated that two useful distinctions can be made for future research efforts.

First, the emittor of the nonverbal behavior may simply be attempting to validate, confirm, or reinforce a personal definition or act--without regard for how the behavior influences the social behavior of others, (self-presentation norms, for example). We suspect that subjects in our study perceived the confederates in this fashion. They were cognizant of the

confidence or doubtfulness expressed by the confederates (in fact, modeled their own nonverbal behavior to conform to the condition expressed by the confederates), but failed to permit these perceptions to alter significantly their own conformity behavior.

On the other hand, the emittor may consciously (some argue that it may occur beyond awareness--Spielberger, 1965) attempt through nonverbal actions to elicit certain behaviors from others. In the social influence situation, "other-directed" behaviors are, by definition, stronger determinants of influence than are "self-directed" behaviors. Hence, we recommend that further attention be given to the operant conditioning model--in so far as the study of nonverbal behavior in group pressure settings is concerned.

The second principal purpose of this study was to determine if the message consistency construct proposed by Mehrabian (1971a), could be manipulated analogously in the conformity setting to produce similar effects; that is, can nonverbal behavior override the implications of a verbal statement? In the present study, the counterpart of Mehrabian's verbal stimulus (a word), which he used to assess the total feeling communicated after nonbal manipulation, was the bogus responses made by the accomplices. Similarly, the uniform nonverbal doubtfulness expressed by the confederates was analogous to Mehrabian's inconsistent or contradictory facial and vocal cues. Our results indicated that although subjects consciously perceived that the confederates were behaving according to the intended manipulation, there were no significant differences between the confident and doubtful treatments in amount of yielding.

Referring to our earlier discussion concerning the role of nonverbal

behavior in a social influence situation, we cannot conclude that our manipulations provided a definitive test of the inconsistency hypothesis. We do feel, however, that the conformity setting permitted a more powerful and rigorous experimental setting for exploring the implications of the hypothesis.

The results of the videotape analysis indicated that the subjects were to some extent matching their nonverbal responses with those of the confederates, and, apparently, this matching occurred unconsciously. We feel that imitation was the principal process operating, and that our results corroborate findings reported by Rosenfeld (1967), regarding matching of gestures, facial affect, and posture.

Argyle (1969) pointed out that imitation occurs when A replicates a response of B, usually to the same situation. He distinguished imitation from reciprocity, noting that the latter implies ". . .if A does something for B, B usually responds by the performance of some equivalent act for A (p. 173)." Argyle goes on to add:

> (1) The reciprocity act is not necessarily similar to the original, but is equivalent in reward value; (2) reciprocity is not an immediate, unthinking response, but is carefully calculated and follows after an appropriate interval of time; (3) conscious awareness of what is happening inhibits imitation, but makes reciprocity more probable; (4) reciprocation is less likely when the other is of higher status, not more likely as with imitation. (p. 173)

Given that Argyle's remarks apply chiefly to social behavior in dyadic settings, we see an important implication, based on the videotape analysis, for the study of response matching in social influence situations. We would predict that the form of response matching can be a critical conformity correlate. This study's data base was too thin for an adequate

analysis, but it was noted post hoc that individuals conforming the most seemed to least imitate the nonverbal behaviors of the confederates in both the confident and doubtful treatment conditions.

Assuming that yielding in the conformity situation is roughly comparable to an act of reciprocation (in the sense that B feels obligated to maintain group unanimity of response), then extent of nonverbal imitation behavior by B may signal tendencies to resist group pressure. In other words, for the nonconformist this kind of response matching may function in a placative capacity--a subtle form of ingratiation, if you will. Stated differently, we are suggesting that in group pressure situations there may be an inverse relationship between nonverbal and verbal conformity behavior.

The next step for subsequent research on the issues raised in this paper would involve the manipulation of conformity as an independent variable. Such a manipulation would permit an adequate test of the operant conditioning model discussed earlier. Confederates would be instructed to express rewarding (complimentary) and nonrewarding (contradictory) nonverbal cues after the subject had either yielded or not yielded to the bogus group response. Subsequent yielding behavior after positive or negative nonverbal reinforcement would constitute the principal dependent variable.

As a final note, the exploratory nature of this study must be reemphasized. We have taken the liberty of building hypotheses on an admittedly fragile data base. Regardless of this limitation, the findings reported in this investigation should suggest directions for future research about the function of nonverbal behavior in social influence situations that has, perhaps, previously been taken for granted.

References

Argyle, M. Social Interaction. New York: Atherton, 1969.

Asch, S. E. Effects of group pressure upon the modification and distortion of judgment. In H. Guetzkow (Ed.), Groups, leadership, and men. Pittsburgh: Carnegie Press, 1951.

Asch, S. E Social psychology. Englewood Cliffs, New Jersey: Prentice Hall, 1952.

Asch, S E Studies of independence and conformity. A minority of one against a unanimous majority. Psychological Monographs, 1956, 70, No. 9 (Whole no. 416).

Crowne, D. P., and Marlowe, D. The approval motive. New York: John Wiley & Sons, 1967.

Crutchfield, R. S. Conformity and character. American Psychologist, 1955, 10, 191-198.

Deutsch, M., and Gerard, H. A study of normative and informational social influences upon individual judgment. Journal of Abnormal and Social Psychology, 1955, 51, 629-636.

Duncan, S. Nonverbal communication. Psychological Bulletin, 1969, 72, 118-137.

Ekman, P., Ellsworth, P., and Friesen, W. V. Emotion in the human face: guidelines for research and an integration of findings. New York: Pergamon Press, 1971.

Knapp, M. L. Nonverbal communication in human interaction. New York: Holt, Rinehart, and Winston, 1972.

Krasner, L. Studies of the conditioning of verbal behavior. Psychological Bulletin, 1958, 55, 148-170.

Krech, D., Crutchfield, R., and Ballachey, E. L. Individual in society. New York: McGraw-Hill, 1962.

Levy, L. Studies in conformity behavior: a methodological note. Journal of Psychology, 1960, 50, 39-41.

Mehrabian, A. Silent messages. Belmont, California: Wadsworth Publishing Co., 1971. (a)

Mehrabian, A. Nonverbal communication. Nebraska symposium on motivation. University of Nebraska Press, 1971, pp. 107-162. (b)

Proshansky, H. and Seidenberg, B. (Eds.) Basic studies in social psychology. New York: Holt, Rinehart, and Winston, 1965.

Rosenfeld, H. M. Nonverbal reciprocation of approval: an experimental analysis. Journal of Experimental Social Psychology, 1967, 3, 102-111.

Siegel, S. Nonparametric statistics for the behavioral sciences. New York: McGraw-Hill, 1956.

Spielberger, C. D. Theoretical and epistomological issues in verbal conditioning. In S. Rosenberg (Ed.) Directions in psycholinguistics. New York: Mcmillan, 1965.

Strickland, B. R., and Crowne, D. P. Conformity under conditions of simulated group pressure as a function of need for social approval. Journal of Social Psychology, 1962, 58, 171-181.

Verplanck, W. S. The control of the content of conversation: reinforcement of statements or opinions. Journal of Abnormal Social Psychology, 1955, 51, 668-676.

Wiener, M., Devoe, S., and Geller, J. Nonverbal behavior and nonverbal communication. Psychological Review, 1972, 79, 185-214.

Williams, J. H. Conditioning of verbalization: a review. Psychological Bulletin, 1964, 62, 383-393.

Footnotes

1. These categories have been tested and validated elsewhere by a host of investigators. See, for example, Ekman (1971).

2. During these trials, the confederates made unanimous, accurate judgments about the emotions being portrayed.

3. During these trials, unanimous erroneous judgments were made by the confederates.

4. The investigators felt that a perceptual discrimination task would increase the liklihood that subjects would recognize or recall the similarity of this experiment to the well known conformity research paradigm.

5. Asch (1952) reported that maximum yielding occurred with three confederates and did not significantly increase with the addition of more confederates. Two of the confederates in the present experiment were males; all three are graduate students in the Department of Communication at Purdue University.

6. The cues for the confident and doubtful treatments were derived from research reported by Knapp (1972), Wiener et al (1972), Mehrabian (1971a), and Duncan (1969).

7. Use of the term neutral is somewhat misleading, since it is questionable that a neutral point does exist in so far as nonverbal behavior is concerned. In the context appropriate to this study, neutral refers to the relative absence of cues suggesting doubtfulness or confidence.

8. One class member arrived late and missed the stimulus validation exercise.

9. This correlation was accomplished by assigning a value of "1" to each recognition of a nonverbal cue exhibited by a confederate that corresponded to the movement intended for that condition (confident, doubtful, or neutral). Since there were five distinct cues that the confederates expressed, a judge's score for the component assessment could range from 0 to 5. This method of quantifying the component evaluations yielded the necessary ordinality for the Spearman Rank correlation. The judgmental evaluations were scored using the Likert procedure discussed earlier.

10. Twenty per cent of the sample were male graduate students from the physical sciences; 23 per cent were male and female undergraduates from the humanities; and 57 per cent were wives of students enrolled in various departments at Purdue University.

11. The decision to use cards as a substitute for an oral response on four of the six neutral trials further reduced the probability that unintended vocal cues might influence a subject's preference. For the remaining two neutral trials, the confederates' nonverbal behavior--appropriate for the treatment condition--was intended to minimize the subject perceiving atypical behavior during the six critical trials.

12. Subjects were videotaped from an observation deck behind the one-way mirrors. One room was used for the absent treatment and the other for the confident and doubtful treatments. This procedure insured that the physical environment would remain unaltered for all treatment conditions.

13. The written instructions appeared to be identical for the subject and the confederates. Actually, imbedded in the confederates'

instructions were symbols identifying the treatment condition and response sequence for the stimulus arrangement.

14. The confederates and subject were instructed to view the slide, select an emotional category, and then report the category number to the experimenter. The subject was always positioned so that his judgment would be elicited last.

15. Subjects could not be coerced, obviously, to attend to the confederates' nonverbal behavior. The investigators reasoned, however, that although some subjects would be more attentive than others, these differences would be randomized across treatments. The videotape analysis indicated that this assumption was warranted.

16. Subject scoring below the sample mean (n=12) were placed in the low group, and those scoring above the mean (n=18) were placed in the high group. This procedure was consistent with the method recommended by Crowne and Marlowe (1964). The mean for this sample was 13.93.

17. Krech, Crutchfield, and Ballachey (1962), have observed this same phenomenon--yielding with awareness of group pressure to induce conformity. This type of yielding, termed "expedient" conformity, exists when the individual publicly announces agreement while privately disagreeing.

Table 1

Stimulus Selection Summary

| | (Trial) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1* | 2* | 3** | 4** | 5** | 6* | 7* | 8** | 9** | 10** | 11* | 12* |
| Intended Emotion | E.J. | S.S. | S.H. | D.A. | N. | E.J. | E.J. | S.S. | S.H. | D.C. | E.J. | A.R. |
| Per Cent Agreement by Validation Group (N=20) | 100% | 95% | 20% | 10% | 20% | 100% | 100% | 15% | 15% | 25% | 95% | 95% |

Note.--E.J. = Enjoyment - joy; S.S. = Surprise - startle; S.H. = Shame - humiliation; D.A. = Distress - anguish; N = Neutral; D.C. = Disgust - contempt; A.R. = Anger - rage.
*--designates neutral trials.
**--designates critical trials.

Table 2

Component Analysis of Confederate
Nonverbal Behavior

| Intended Condition (N=11) | Nonverbal Cues H.M.* | P.P.* | L.C.* | B.A.* | V.* | Row Average |
|---|---|---|---|---|---|---|
| Confident | 85% | 73% | 91% | 94% | 91% | 87% |
| Doubtful | 18% | 58% | 76% | 55% | 91% | 60% |
| Neither Confident nor Doubtful | 94% | 70% | 64% | 82% | 66% | 75% |

Note.--percentages reflect agreement by the judges that a given nonverbal cue was synchronous with the condition it was intended to denote.
*--H.M. = Head Movement; P.P. = Palm Position; L.C. = Lip Configuration; B.A. = Body Angle; V. = Vocal).

Table 3

Judgmental Evaluation of
Confederate Nonverbal Behavior

| Judgment (N=10) | Condition: Confident | Doubtful | Neither Doubt Nor Confidence |
|---|---|---|---|
| Observer Agreement That Behavior Reflects Experimental Condition | 93% | 83% | 67% |
| Degree to Which Confederate Behavior was Perceived as Artificial by Observers | 29% | 53% | 28% |

Note.--Percentages reflect average judgments about the three confederates within each condition.

Table 4

Spearman Rank Correlations Between Component And Judgmental Assessments of Confederates' Nonverbal Behavior

| Condition | Confederate A | B | C |
|---|---|---|---|
| Confident | .91** | .73* | .85** |
| Doubtful | .84** | .69* | .89** |
| Neither Confident nor Doubtful | .89** | .64* | .92** |

Note.--Correlations reflect relationships between component and judgmental ratings within conditions for each confederate.
*$p < .05$, $df = 8$.
**$p < .01$, $df = 8$.

Table 5

Summary of Yielding Observations and Stimulus Ambiguity for Each of the Six Critical Trials

| | Trial(Slide) | | | | | |
|---|---|---|---|---|---|---|
| | (3) | (4) | (5) | (8) | (9) | (10) |
| Amount of Yielding | 12 | 5 | 10 | 19 | 12 | 9 |
| Per Cent (N=30) | 40% | 16.6% | 33.3% | 63.3% | 40% | 30% |
| Per Cent of Validation Group Selecting an Emotional Category | 70%<br>20%**<br>10% | 60%<br>30%<br>10%** | 50%<br>20%<br>20%**<br>10% | 45%<br>35%<br>15%**<br>5% | 45%<br>25%<br>15%**<br>15% | 65%<br>25%**<br>10% |
| Total No. Emotional Categories Selected | 3 | 3 | 4 | 4 | 4 | 3 |

Note.--The emotional categories reflected by these percentages constituted the experimental categories that represented the unanimous confederate response. Average yielding during the critical trials = 37.2%.

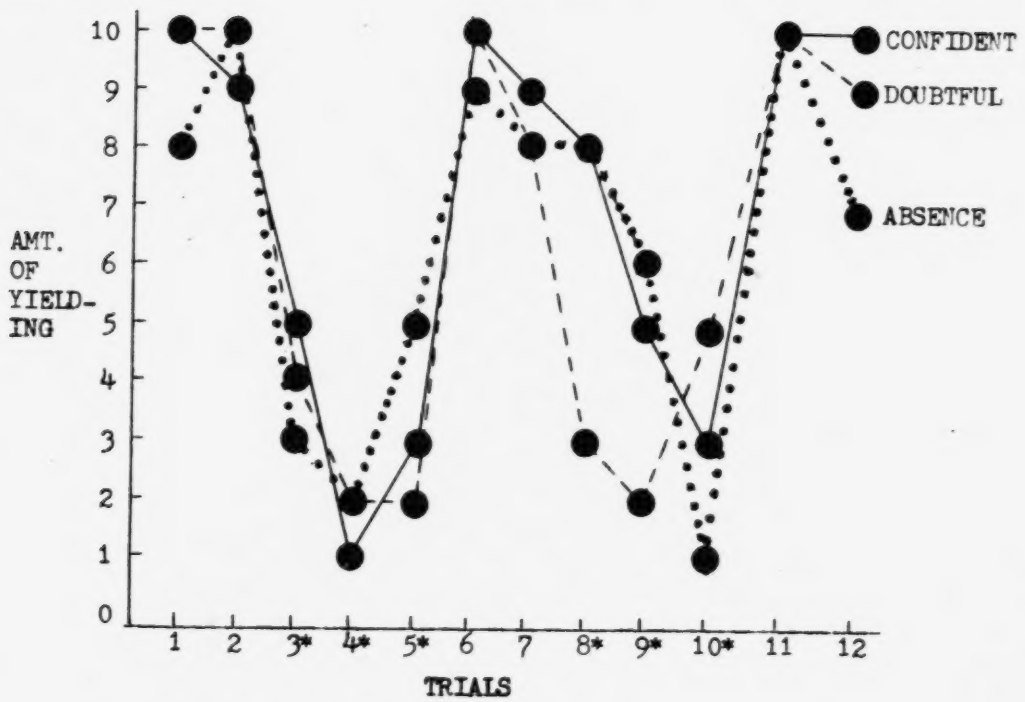


Fig. 1. Number of subjects yielding in each treatment condition over all trials. (*) denotes the six critical trials.